

REMARKS

Applicant respectfully requests the Examiner to reconsider and again examine the claims in accordance with the provisions of 37 C.F.R. §1.116.

Claims 1-41 are pending in the application. Claims 13-21 and 32-41 are allowed. Claims 1, 3, 9-12, 22, and 28-31 are rejected. Claims 2, 4-8 and 23-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Applicant's attorney, Kermit Robinson, would like to thank Examiner Stork for the courtesy extended to Applicant's attorney during the telephone interview on March 11, 2006. Rejection of Claims 1, 3 and 22 of the Office action were discussed. The reference by Wiley et al. (U.S. Patent number 6,154,219), used by the Examiner, was discussed.

The Rejections under 35 U.S.C. §103(a)

The Examiner rejects Claims 1, 3, 9-12, 22, and 28-31 under 35 U.S.C. §103(a) as being unpatentable over Wiley et al. (U.S. Patent number 6,154,219) in view of Varon (U.S. Patent number 6,081,764). With regard to independent Claims 1, 3, and 22, the Examiner recognizes that Wiley et al. fails to teach displaying a label at initial display coordinates and moving the label on the display. The Examiner relies upon Varon as teaching “[d]isplay[ing] the at least one label at the initial display coordinates...[and] [m]oving the at least one label on the display...” The Examiner concludes that “[i]t would have been obvious to one of ordinary skill in the art at the time of the applicant’s invention to have combined Wiley’s apparatus with Varon’s apparatus, since it would have allowed a user track a plurality of targets without swapping labels...” Applicant respectfully disagrees.

Independent Claim 1 recites an apparatus including “...a display processor operable to identify at least a first cluster of overlapping labels on said display ...and to move said at least one label on said display from said initial display coordinates to said new display coordinates.”

Independent Claim 3 recites and apparatus including "...means for identifying at least a first cluster of overlapping labels...and means for moving said label on the display from an initial position in accordance with said initial display coordinates to a new position in accordance with said new display coordinates." Independent Claim 22 recites a method including "...identifying at least a first cluster of overlapping labels...and moving said label on the display from said initial display coordinates to said new display coordinates."

In essence, independent Claims 1, 3 and 22 describe apparatus and methods operable to identify clusters of overlapping labels, to display the overlapping labels at respective initial display coordinates (i.e., at initial positions on the display), to identify new display coordinates for the labels, and to move the labels to the new display coordinates (i.e., to new display positions).

In contrast, Wiley et al. describes a static map display system for which **labels are displayed only at final locations**, which do not collide with other objects already placed on a computer screen. Objects (including labels) are placed on the computer display one at a time, in order of importance. Objects already placed on the display are "senior" to objects not yet placed. Wiley et al. describes such an arrangement in conjunction with FIGS. 2 and 3. For example, with regard to FIG. 2, at column 7, lines 56-58, Wiley et al. states "the method begins displaying and labeling the objects in the first list in ascending order by label selection priority."

Varon describes an air traffic control system having a display on which aircraft icons and associated labels move on the display. Varon attempts to solve a problem of aircraft tracking (e.g., loss of a track) on a computer display when aircraft icons collide. After the collision of aircraft icons, Varon attempts to resolve which aircraft icon follows which track on the computer screen thereafter. Varon does not attempt to avoid the collision of icons or labels. For example, at column 3, lines 52-55, Varon states "[w]ith this particular arrangement, an apparatus for correlating new radar data with existing aircraft tracks and which minimizes miscorrelations, track equalization, and permanent label swapping and track loss is provided." Varon attempts to

eliminate potential swapping of labels when aircraft icons cross paths, but the labels of Varon are free to collide.

Applicant submits that Wiley et al. teaches away from the combination of Wiley et al. and Varon suggested by the Examiner. Wiley et al. describes a "System and Method for Optimally Placing Labels on a Map," (title), i.e., a geographical map display as in FIG. 4 of Wiley et al., for which labels are statically placed on a computer display. The teachings of Wiley et al. are suitable, for example, for geographical maps for which displayed objects do not move. As described above, each object, sequentially placed, becomes senior to objects not yet placed. Applicant submits that Wiley et al. specifically excludes the possibility of any movement of objects on the computer screen. In particular, at column 8, lines 37-40, with regard to FIG. 3, Wiley et al. states "[a]t decision block 234, a test determines whether the first label position collides with a senior object. In the exemplary embodiment, a senior object is not moved or removed from the display in the event of a collision." This arrangement teaches away from the combination suggested by the Examiner, wherein objects (including labels) move on the computer display.

Wiley et al., in conjunction with step 210 of FIG. 2, describes a clear distinction between mapping (i.e., calculation) of label coordinates and display of the label. For example, at column 7, lines 9-16, Wiley et al. states:

At step 210, all the objects in the first list are mapped to the display. For the purpose of this discussion, the term "mapped" means the actual location of the object on the display is determined and stored in memory. The terms "displayed" or "drawn" mean that the object is actually drawn to the display. In other words, an object can be mapped without being displayed, so that its location on the map is determined, but it is not yet visible to the user. [emphasis added]

In conjunction with step 220 of FIG. 2, at column 7, line 56 to column 8, line 9, Wiley goes on to state:

Next, at step 220, the method 200 begins displaying and labeling the objects in the first list in ascending order by label selection priority. Each object is evaluated as it is displayed to avoid colliding with a senior object. As each object is drawn, its label is evaluated in several label positions associated with that object to avoid colliding with more senior objects, as well as more junior

objects (objects which remain to be displayed). In this manner, this exemplary embodiment overcomes the problems in the prior art by not only considering more important objects when labeling, but also considering less important objects. The present embodiment will place an object's label in a less cartographically preferable position if the penalty for the label position is outweighed by the desire to display the more junior object. The labeling step 220 is discussed in more detail with reference to FIG. 3. It will be apparent to those skilled in the art that the positions for the labels can be determined at this step, and display can occur at anytime after the position is determined. It is only important that the position be determined so that junior objects can avoid collisions with the determined position. [emphasis added]

FIG. 3 of Wiley et al. describes in greater detail the labeling step 220 of FIG. 2. With regard to FIG. 3, at column 8, lines 22-23, Wiley et al. states, "[t]he object may not be displayed until after the method 230 determines that the object can be labeled." Applicant submits that in order to know if the object can be labeled, the label must be mapped, i.e., its final display coordinates must be determined, by the process of FIG. 3. In the process FIG. 3, a plurality of label positions associated with an object are tested by way of blocks 234, 250, 252, and 253, but the tested label positions are not displayed. Only the final label position is displayed, if a final position is determined and displayed at all. If no final position is determined that does not result in a collision, at block 258, the label being tested is not drawn at all.

In the Response to Arguments (contrary to page 3 of the Office Action, where the Examiner indicates that Wiley et al. fails to suggest the moving of the label on the display), the Examiner uses Wiley et al. at column 5, lines 7-18 to teach the claimed moving on the display. However, Applicant can find no such moving on the display anywhere in Wiley et al. Applicant can only find suggestion of "mapping," which, as described above, is different than displaying.

Applicant further submits that the combination of Wiley et al. and Varon suggested by the Examiner would not result in the claimed invention, which is operable to move a label on a display from initial display coordinates to new display coordinates having less overlap. As described above, Wiley et al. describes a map display system for which labels are statically placed based in part upon overlaps. Varon merely describes objects and associated labels that move on a computer display irrespective of overlap. Applicant submits that a combination of

Wiley et al. with Varon would result in a system, which, at one time, displays objects and labels on a computer map display that do not collide by the teachings of Wiley et al., and for which labels moving thereafter by the teachings of Varon result in collisions of objects and labels on the display, which Varon does not attempt to affect.

In the Response to Arguments, the Examiner asserts that the test for obviousness is not whether the features of the secondary reference may be bodily incorporated into the structure of the primary reference, but instead the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. Applicant submits that Varon adds little more than a suggestion provided by any displayed object that can move on a computer screen, for example, a mouse cursor, which moves on a computer screen. Applicant submits that the suggestion to those of ordinary skill in the art of the combined teachings of Wiley et al. and Varon would be the combined system as described above, which is not the claimed invention.

Still further, Applicant submits that a combination of Wiley et al. and Varon entirely destroys the intended function of Wiley et al. As found in MPEP §2143.01, in order to establish a prima facie case of obviousness "...[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." (See e.g., In re Ratti, 270 F.2d 810, 123 USPQ 349 (C.C.P.A. 1959)). Applicant submits that, to modify the teaching of Wiley et al. in the manner suggested by the Examiner, to move displayed objects as taught by Varon, would not only change the principle of operation of, but would also destroy the intended function of the Wiley et al. reference. As described above, Wiley et al. intentionally teaches a display for which objects are placed at final locations, and, once placed, are not moved thereafter. Such an arrangement is suitable, for example, for display of a static geographic map, for example, as in FIG. 4 of Wiley et al.

In view of the above, Applicant submits that independent Claims 1, 3, and 22 are patentably distinct over Wiley et al., whether taken alone or in combination with Varon.

Claims 9-12 depend from and thus include the limitations of Claim 3. Claims 28-31 depend from and thus include the limitations of Claim 22. Thus, Applicant submits that Claims 9-12 and 28-31 are patentably distinct over the cited references at least for the reasons discussed above in conjunction with Claims 3 and 22.

Applicant submits that Claim 10 is further patentably distinct over Wiley et al., whether taken alone or in combination with Varon, since the cited references neither describe nor suggest "... means for calculating said new display coordinates according to a stochastic method," as set forth in Claim 10. The Examiner, in the Response to Arguments, uses Wiley et al. at column 8, lines 50 to column 9, line 18 to teach the claimed stochastic method. However, this excerpt teaches a prioritized order of label placement, which is not stochastic.

For Example, Wiley et al. states at column 8, lines 50-59:

At decision block 244, a test is performed to determine whether the label position eliminated at step 242 was the last available label position for the object. As discussed above, each object can have multiple label positions of varying cartographic preference. For instance, in the exemplary embodiment, a label for a point can be placed in label positions including the northeast (most cartographically preferred), southeast, northwest, southwest, north-northwest, or south-southwest positions (in descending order of cartographic preference).

The Examiner suggests that a trial and error method is the same as a stochastic method. Applicant respectfully disagrees. The trial and error method of Wiley et al. uses fixed compass coordinate positions in a fixed order of priority, and is, therefore, not stochastic. Applicant can find no mention of a stochastic method of calculating new display coordinates anywhere in Wiley et al.

Applicant submits that Claim 11 is further patentably distinct over Wiley et al., whether taken alone or in combination with Varon, since the cited references neither describe nor suggest "... means for calculating said new display coordinates according to a heuristic method," as set forth in Claim 11. A heuristic method will be recognized to be a technique by which a best solution is determined from several solutions that are found by alternative methods. The

Examiner again uses Wiley et al. at column 8, line 50 to column 9, line 18 to teach the heuristic method. However, this excerpt teaches a single prioritized order of label placement, not a selection of solutions from several alternative methods. Applicant can find no mention of a heuristic method of label placement anywhere in Wiley et al.

For substantially the same reasons discussed above in conjunction with Claim 10, Applicant submits that Claim 29 is further patentably distinct over Wiley et al., whether taken alone or in combination with Varon, since the cited references neither describe nor suggest "... said new display coordinates according to a stochastic method," as set forth in Claim 29.

For substantially the same reasons discussed above in conjunction with Claim 11, Applicant submits that Claim 30 is further patentably distinct over Wiley et al., whether taken alone or in combination with Varon, since the cited references neither describe nor suggest "... said new display coordinates according to a heuristic method," as set forth in Claim 30.

In view of the above, Applicant submits that the rejection of Claims 1, 3, 9-12, 22, and 28-31 under 35 U.S.C. §103(a) should be removed.

The Claim Objections

The Examiner objects to Claims 2, 4-8, and 23-27 as being dependent upon a rejected base claim, but indicates that Claims 2, 4-8, and 23-27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

For the above reasons, Applicant submits that independent Claim 1, from which Claim 2 depends, is patentably distinct over the cited references. Therefore, Applicant submits that Claim 2 is allowable in its present dependent form. Applicant submits that independent Claim 3, from which Claims 4-8 depend, is patentably distinct over the cited references. Therefore, Applicant submits that Claims 4-8 are allowable in their present dependent form. Applicant submits that independent Claim 22, from which Claims 23-27 depend, is patentably distinct over

the cited references. Therefore, Applicant submits that Claims 23-27 are allowable in their present dependent form.

In view of the above Remarks, Applicant submits that Claims 1-41 and the entire case are in condition for allowance and should be sent to issue and such action is respectfully requested.

It is submitted that this amendment places the application in condition for allowance or in better form for consideration on appeal, and thus, entry of this amendment is respectfully requested under the provisions of 37 C.F.R. §1.116.

The Examiner is respectfully invited to telephone the undersigning attorney if there are any questions regarding this Response or this application.

The Assistant Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 500845, including but not limited to, any charges for extensions of time under 37 C.F.R. §1.136.

Respectfully submitted,

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